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Lost Lives

Work-related deaths in British Columbia in 2001

a focus on occupational disease

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Photo on dedication page

The photo on the back of the title page shows the Workers' Memorial in the Sanctuary at Vancouver's Hastings Park. The memorial was dedicated on the Day of Mourning in April 2001.

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About the WCB

Preventing on-the-job injury and disease is the first priority of the Workers' Compensation Board (WCB) of British Columbia. WCB officers inspect worksites in B.C. to make sure they comply with the Occupational Health and Safety Regulation, which sets out minimum workplace standards for health and safety. The WCB also investigates serious workplace accidents and consults with employers, supervisors, and workers to promote health and safety in the workplace.

Under the requirements of the *Workers Compensation Act*, a worker must report an injury or a disabling occupational disease as soon as possible to the employer. The employer must report work-related injuries, occupational diseases, and work-related deaths to the WCB within three days. A worker may not make an agreement with the employer to give up WCB benefits.

If a worker suffers a work-related injury or illness, the WCB provides fair compensation that may include medical costs, loss of earnings, physical rehabilitation, and pensions. The WCB also works with employers to help injured workers return to work. If a worker is killed on the job, counselling and financial help are made available to the victim's family. For more information on requirements or eligibility for WCB coverage, contact the WCB office nearest you.

WCB Prevention Information Line

The WCB Prevention Information Line can answer your questions about workplace health and safety, worker and employer responsibilities, and reporting a workplace accident or incident. The Prevention Information Line accepts anonymous calls.

Phone 604 276-3100 in the Lower Mainland, or call 1 888 621-7233 (621-SAFE) toll-free in British Columbia.

To report after-hours and weekend accidents and emergencies, call 604 273-7711 in the Lower Mainland, or call 1 866 922-4357 (WCB-HELP) toll-free in British Columbia.

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Lost Lives

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Dedication

In memory of those who have lost their lives as a result of a workplace accident or occupational disease

The need for vigilance

Every April on the Day of Mourning we honour the memories of those who have lost their lives as a result of a work-related injury or disease. Each death is especially tragic because, in almost every case, something could have been done to prevent the loss of life.

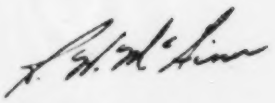
In 2001, work-related injuries and diseases claimed the lives of 168 workers. More than one-third of these workers – 58 men and women – died from a disease related to their work. The share of work-related deaths caused by disease has been slowly increasing over the past couple of decades. Why?

The increase in disease deaths is largely due to exposure to asbestos fibres that occurred 25 to 40 years ago across North America. Unlike today, safe work practices for handling asbestos were not well established in the past, and many workers received little or no protection from the harmful fibres. More and more workers who were exposed to asbestos fibres decades ago are now being diagnosed with fatal lung diseases.

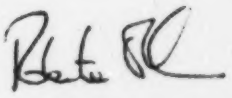
Work-related deaths caused by disease pose special challenges. As in the case of the asbestos-related diseases, it may be many years after exposure to a hazardous substance before workers know they have a health problem. These workers may then suffer for many more years after the disease is diagnosed. The human costs of work-related disease – suffering, disability, stress, and the emotional toll on workers and their families – are immense.

What can we learn from the lives that have been lost? To prevent work-related disease deaths years into the future, we must identify and control exposure to hazardous substances today. To this end, the WCB has set up the new Occupational Disease Prevention Services section to focus and lead its efforts to prevent work-related diseases.

Preventing work-related deaths requires the combined efforts of employers, supervisors, workers, and the WCB. The human and economic costs of these lost lives all contribute to the urgency of this task.



Ralph McGinn
President and CEO
Workers' Compensation Board
of British Columbia



Roberta Ellis
Vice president, Prevention Division
Workers' Compensation Board
of British Columbia

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A renewed focus on preventing work-related disease

Work-related disease deaths are rising

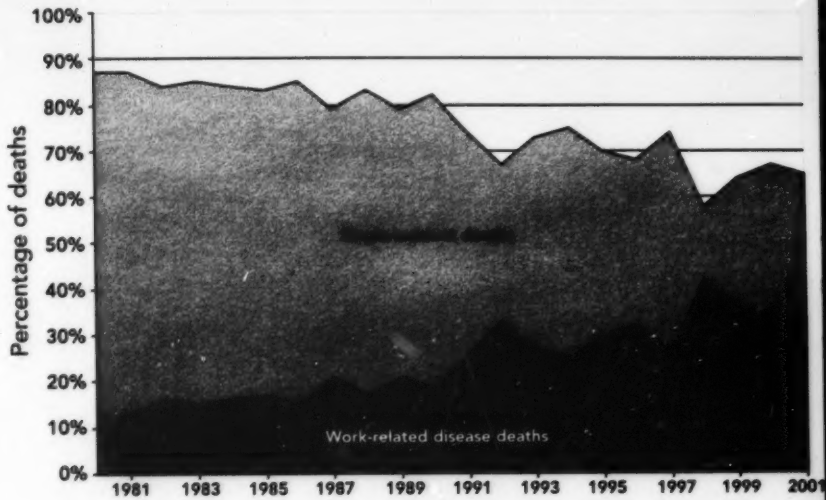
The story of deaths from work-related disease is a story of human and economic costs borne by individual workers, their families, and industry over periods that often extend for years. As will be seen in the pages that follow, most of the deaths from work-related disease are due to exposure to asbestos fibres that occurred decades ago, when workers received little protection from this type of exposure.

The lesson in today's disease statistics is clear. We need to prevent exposure to harmful substances today in order to prevent workers from dying of disease in the future. To this end, the WCB's new Occupational Disease Prevention Services section will focus on the prevention of work-related disease (see the sidebar on page 10 for more details).

Awareness of health and safety in B.C. workplaces has led to improvements in equipment and facilities, better training, and safer work practices. These, in turn, have reduced accidents and saved the lives of many workers. From 1990 to 2001, the death rate in B.C. workplaces dropped, which means that the number of deaths in relation to the working population has been decreasing. The number of single-incident deaths also declined, from 137 in 1990 to 110 in 2001.

These encouraging trends are marred by a more sombre one, however. Deaths due to work-related diseases have been increasing over the same period, from 31 in 1990 to 58 in 2001. Disease deaths account for a growing proportion of overall work-related deaths, from 13% in 1980 to 35% in 2001.

Proportion of single-incident deaths to work-related disease deaths in B.C., 1980–2001



Work-related disease deaths have been increasing over the past 22 years while single-incident deaths have been decreasing. Disease deaths from earlier exposure to asbestos explain why the overall number of work-related deaths each year stays about the same, even though health and safety improvements have reduced the number of single-incident deaths.

Single-incident deaths are work-related fatalities that occur when workers receive injuries or are exposed to large amounts of hazardous substances. In these cases, workers die either immediately or soon afterwards.

Work-related disease deaths are work-related fatalities that occur when workers contract a disease as a result of long-term exposure to a hazardous substance or contact with a disease-causing agent. In these cases, workers die after months or years have passed.

Life forever changed by loss

At age 56, Ariel Johnston was living her dream. She and her husband, Fred, had built an idyllic home on Lake Mara, near Sicamous. Together, they had raised three children, Mel, Charlene, and Freddie, and now had four beautiful grandchildren, Marisa, Kyle, Amanda, and Zachary. But it all came crashing down in May 1999, when Fred was diagnosed with mesothelioma – an aggressive and incurable cancer of the lung lining caused by exposure to asbestos.

"I was in utter shock," says Ariel. "My heart just sank. I remember thinking to myself over and over again, 'This isn't happening. Fred can't be dying.'"

For most of his life Fred had worked as a construction foreman overseeing the installation of sheet metal and air conditioning systems. He most likely came into contact with asbestos fibres during the 1970s or early 1980s while working on several large buildings that contained asbestos insulation, mostly in and around the Lower Mainland.

"Once the realization set in, our shock and disbelief turned to anger and frustration," says Ariel. "Fred never knew that he was being exposed, so he didn't have a chance to protect himself. It just wasn't fair. He was extremely upset, but at the same time defiant. Fred was determined to beat the odds."

Not being one to back down from a challenge, Fred did everything he could to fight the cancer, including eight months of experimental drug treatment and chemotherapy. But the growing sickness and the drugs began to take their toll. He developed sores in his mouth, making it difficult to eat solid food. His breathing became laboured and his energy began to fade. Fred could no longer do the things he had always enjoyed in life, like coaching softball and working with his tools. Despite Fred's efforts, the cancer soon overwhelmed him and he passed away on April 29, 2000, at the age of 60 – a mere 11 months after first being diagnosed.

"Our entire family was devastated," says Ariel. "It was particularly hard watching him fade before our eyes. He had always been so active; none of us were prepared for how quickly his health would deteriorate. We never talked about how long Fred had to live. We just took it one day at a time – that's all you can do – you can't think about the weeks or months ahead, just live in the moment and enjoy the time you have. We also never gave up hope. Fred kept fighting right up till the very end.

"I'm trying to get on with my life now, but it isn't easy. I know in my heart he's still with me, but a piece of my life is missing and I'll never get it back."

Ariel says she will always treasure her time with Fred – her husband, soulmate, and the only man she ever loved. One of her most vivid memories is the way that Fred faced his approaching death with bravery and dignity.

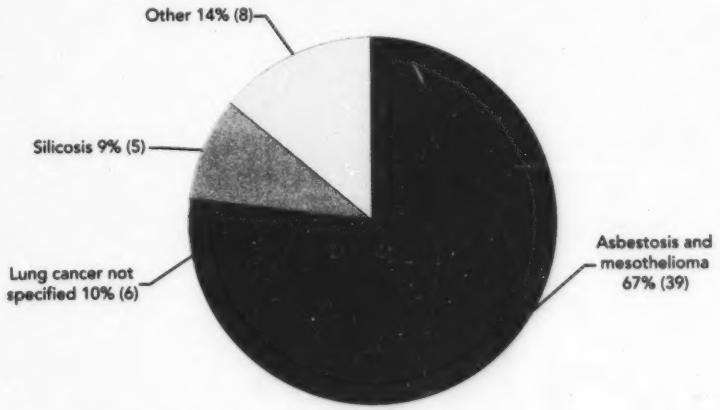
"He wasn't afraid of dying," she says. "He just didn't want to leave his family."

Work-related disease deaths in 2001

In 2001, the WCB accepted 58 death claims from work-related diseases. The disease categories are shown in the following graph. The sidebar describes each category and gives examples of the types of deaths that occurred in 2001.

Asbestosis and mesothelioma – diseases caused by exposure to asbestos – account for two-thirds of the work-related disease deaths in 2001. "Lung cancer not specified" refers to lung cancers other than mesothelioma and includes the first death claim from work-related environmental tobacco smoke accepted by the WCB.

Work-related disease deaths in B.C., 2001



Total number of work-related disease death claims accepted in 2001 = 58

Thirty-nine workers died of asbestosis and mesothelioma, accounting for 67% of all work-related disease deaths in B.C. in 2001.

Common work-related diseases

Asbestosis and mesothelioma are asbestos-related diseases. Asbestosis is the name given to scarring and stiffening of the lungs caused by inhaling asbestos dust over many years. It makes breathing difficult. It can lead to fatal complications such as pneumonia, heart disease, and lung cancer. Mesothelioma is a rare cancer of the linings of the lungs and abdomen that almost always leads to death. Practically all mesothelioma cases are linked to asbestos exposure. These diseases usually develop decades – 25 to 40 years – after the worker was exposed to asbestos fibres. Workers who develop asbestosis or mesothelioma have usually been exposed to asbestos fibres during processes such as installing, removing, or simply working around asbestos insulation or other asbestos-containing materials.

A mine worker exposed to asbestos died of asbestosis.

An electrician exposed to asbestos died of mesothelioma.

Lung cancer can result from exposure to various toxic substances, including asbestos, certain chemical vapours, and tobacco smoke.

A floor layer exposed to dusts from sanding and stripping of old asbestos-containing floor coverings died of lung cancer.

A waitress died of lung cancer resulting from exposure to environmental tobacco smoke at work.

Silicosis is a chronic lung disease caused by inhaling silica dust over many years. Like asbestosis, it is recognized by scarring and stiffening of the lungs, making breathing difficult. Silicosis can lead to heart failure and death. Workers who develop silicosis have typically been exposed to silica dust in mining operations or other work in which rock is being drilled, crushed, or moved. The most common type of crystalline silica is quartz, a basic component of sand and most rocks.

A crane operator exposed to silica dust died of silicosis.

A forklift operator in the mining industry died of silicosis.

Other work-related diseases include emphysema (a breakdown of lung tissue that reduces lung elasticity and gas exchange), bladder cancer, and scleroderma (progressive hardening of the skin and connective tissue, possibly associated with exposure to silica dust). Infectious diseases such as hepatitis B and C, hantavirus, and tuberculosis may also be included in this category.

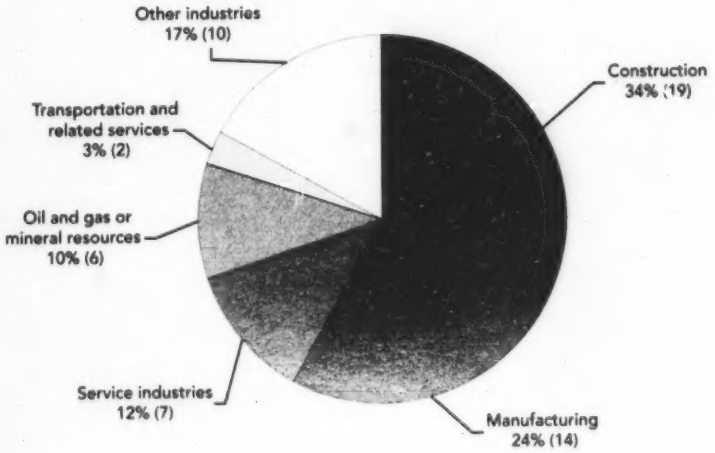
A miner died of scleroderma.

A warehouse foreman died of emphysema resulting from prolonged exposure to grain dust.

Disease deaths touch many industries

Workers in many different industries can be exposed to hazardous substances that cause disease. Construction, manufacturing, and the oil and gas or mineral resources industry together accounted for 68% of all work-related disease deaths in 2001.

Number of work-related disease deaths by industry in B.C., 2001



Total number of work-related disease death claims accepted in 2001 = 58

Industries where workers were exposed to asbestos years ago account for a large proportion of the work-related deaths in 2001.

Studies assist in the prevention of work-related diseases

The WCB is committed to identifying hazardous substances in today's workplaces and taking steps to keep workers healthy and safe at work. As part of its efforts to prevent workplace disease, the WCB funds research to identify hazards that cause disease and to find ways to eliminate or minimize them.

For example, in recent years a large number of buildings in the Lower Mainland of British Columbia have had problems with water penetration in wall cavities and other parts. This has led to extensive mould growth, and workers doing repairs may have been exposed to these biologically active fungi. A WCB-funded study is measuring workers' exposure to inhaled fungi and dust, and assessing workers' respiratory health as well. This study is expected to lead to recommendations for control measures and personal protective equipment to limit exposures to toxic microbial substances. This project should be completed at the end of 2002.

Another WCB-funded study is identifying and assessing agricultural chemicals – such as insecticides, herbicides, and fertilizers. Some of these substances are suspected of causing an increased risk of prostate cancer. Information gained from this study, which is expected to be completed in 2003, could aid in developing strategies to prevent prostate cancer in farm workers.

The WCB is also supporting research to determine whether nurses have a greater risk of cancer than the general population in B.C. The study is evaluating occupational risk factors – exposure to anaesthetic gases, ionizing radiation, and anti-neoplastic drugs – for developing breast cancer and other malignancies. After this study is completed in 2003, prevention activities in the health care industry can be focused on high-risk groups of nurses and other health care workers.

Time frame for work-related diseases

Work-related diseases present special challenges because workers may not be aware that they have a health problem until many years after their exposure to hazardous substances. For example, workers exposed to asbestos may wait as long as 25 to 40 years before they receive a diagnosis for asbestosis or mesothelioma.

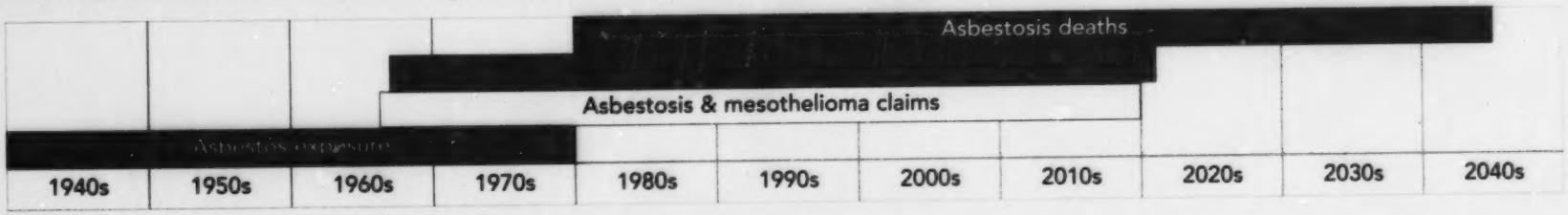
Asbestosis is often a slowly progressive disease, meaning that most of the workers who died of asbestosis in 2001 had their claims accepted by the WCB 15 to 25 years earlier. Mesothelioma is a relatively rapid progressive disease, meaning that most of those who died of mesothelioma in 2001 had their claims accepted six months to two years earlier. As the following graph shows, however, a worker's actual exposure to asbestos may have occurred decades ago, when asbestos was heavily used as an insulating material and workers received little or no protection from exposure to its harmful fibres.

As workers reach the end of the 25 to 40 year period after exposure to asbestos, more and more workers are being diagnosed with these diseases. For example, the WCB accepted 41 mesothelioma claims for long-term disability in 2001 compared with 5 claims in 1990. This trend could continue through the rest of this decade.

The long period of time before asbestosis and mesothelioma are diagnosed explains why the proportion of deaths caused by asbestos-related disease has been rising over the past two decades. Other work-related diseases may be diagnosed in a shorter time period than these fatal lung diseases. With some chemicals we may not yet be aware of how long it takes before workers know they have a disease.

We need to learn from the past. To prevent work-related disease deaths from occurring years from now, we need to identify and control exposure to hazardous substances today.

Correlation between time of exposure to asbestos, onset of disease, and death



The bottom line shows the period when asbestos-containing materials were heavily used with little or no controls or worker protection. The next line shows when claims for asbestos-related diseases were accepted by the WCB; the number of claims is expected to have peaked and to have begun tapering off by 2010. The top two lines show the period of deaths from the earlier asbestos exposure, projected into the future. Workers with asbestosis generally survive longer than workers with mesothelioma.

Saving lives by preventing work-related diseases

Workplace controls and protective equipment have improved greatly and, when properly used, have significantly reduced the threat from substances such as asbestos and silica. WCB claims for diseases such as asbestosis, mesothelioma, and silicosis in recent years are often the result of exposures that occurred several decades ago.

There are many other hazardous substances in today's workplaces, and advances in medical science are revealing new links between these substances and different types of cancers and other diseases. As awareness of these links grows and cause-and-effect relationships become known, the number of claims for certain diseases may go up.

Research has shown that smokers who are exposed to asbestos have a greatly increased risk of lung cancer. This is a synergistic effect, where the interaction of the two hazardous substances (tobacco smoke and asbestos) results in a risk far beyond the sum of the individual risks.

A greater awareness of hazards can lead to better protection for workers, resulting in fewer claims for certain potentially fatal diseases. For example, HIV/AIDS and hepatitis B and C are caused by bloodborne pathogens, so workers who could come into contact with the blood of other people have a higher risk of contracting these diseases. This includes health care workers as well as others whose jobs may bring them into close contact with violent or injured people – workers such as nurses, doctors, paramedics, police officers, firefighters, correctional officers, and security guards. Because the dangers of these diseases are well known, however, both education to enhance awareness and prevention measures to control exposures are in place. There is equipment for handling and disposing of used needles, as well as safe work procedures designed to prevent needle-stick accidents. Other safe work procedures and protective equipment such as gloves are designed to protect workers from coming into direct contact with body fluids.

These developments show that we must continually evaluate the risks to workers from exposure to different hazards and find ways of controlling such exposures. Only by doing so can we avoid "epidemics" similar to those of asbestosis and mesothelioma that we are seeing today.

Other harmful substances in today's workplaces

Workers can develop a variety of diseases and health problems when exposed to sufficient amounts of other toxic substances over a long period of time. Wood dusts, paints and solvents, heavy metals used in welding, and dozens of other substances present health hazards to workers. For example, hardwood dust has been linked to cancers of the nose and throat and presents a risk to furniture makers, hardwood floor installers, and other workers in wood-manufacturing industries.

Hydrogen sulphide is a foul-smelling gas that is a hazard for pulp workers, oil and gas industry workers, hydro workers, sanitation workers, and others who work in environments where hydrogen sulphide may be present. Because it quickly causes loss of the sense of smell, it can be difficult to detect by smell alone before it reaches dangerous levels. At high concentrations, hydrogen sulphide can lead to an asthma-like condition called reactive airway dysfunction syndrome (RADS), which can persist for months or years. At very high concentrations, hydrogen sulphide can be fatal.

The WCB is working with employers and workers to identify and eliminate or reduce exposure to today's hazardous substances in order to save lives in the future.

"To prevent work-related disease deaths years into the future, we must identify and control exposure to hazardous substances today."

Roberta Ellis, vice president,
WCB Prevention Division

Caring for dying workers and their families

Bill Blackler, case manager of Sensitive Claims at the WCB, describes his job as easing the process of death and dying for terminally ill workers and their families by providing good, caring, and compassionate service in a timely manner. He and other Sensitive Claims staff provide assistance before and after a worker's death, developing a close, supportive relationship with the family in the process.

Sensitive Claims staff help workers estimated to have two years or less to live. Most are suffering from mesothelioma, others from asbestosis, lung and other cancers, silicosis, systemic scleroderma, and hepatitis.

Keith Fell became ill in the spring of 1998, but it wasn't until the fall of 1999 that he was diagnosed with mesothelioma at the age of 56. As with each claim, Bill took Keith's work history in detail – places, industries, years of work, tools and materials used, and tasks performed. Keith had worked in the shipbuilding business for eight years in the 1970s, and then as a commercial fisherman. It was during his shipbuilding career that he had been heavily exposed to asbestos.

Bill makes a point of meeting with his clients and their families at their home. He talks with them about their disease and what can be done to help them cope – medical treatment, nursing care, adaptive equipment, and so on. He explains the WCB benefits that are available immediately and, if the client is ready to talk about it, benefits for the surviving family members.

It can be a very emotional time. Workers are often angry about their illness or, like Keith Fell and his wife, Norma, frustrated and upset about how long they had to wait for a diagnosis. In many cases, however, they also appreciate the fact that their families will be cared for after they die.

A worker's condition and needs can change quickly as the illness progresses. Sensitive Claims rehabilitation consultant Daljit Dhariwal visits clients regularly and helps them with their medical, travel, and other needs. Counselling for family members is also provided, including separation and loss counselling to help reconcile the dying person with estranged family members such as a spouse, child, or parent. In Keith's case, besides paying disability benefits, the WCB made the arrangements for experimental treatment. Keith passed away on May 12, 2000, of a complication from his mesothelioma.

Sensitive Claims staff continue to be involved after the worker dies. This can include helping with funeral arrangements, ensuring that pensions and other benefits are paid as quickly as possible, arranging for grief counselling for the family, and arranging vocational counselling for a spouse who has never worked outside the home and would now like to get a job.

Norma Fell continues to receive survivor benefits. She says of the WCB: "They've been an absolute godsend – very caring. I have nothing but praise for what they've done for us."

For Bill and Daljit, it's all about helping dying workers and their families through perhaps the most difficult period of their lives and letting them know that they're not alone.

Working together to prevent work-related diseases

Preventing work-related diseases requires the combined efforts of employers, supervisors, workers, and the WCB. The long time period before some diseases are diagnosed, the months or years of suffering endured by stricken workers and their families, and the economic costs borne by everyone affected by a work-related disease all make this task an urgent one.

What employers can do

Employers are responsible for providing a safe work environment. They can do the following to help prevent work-related diseases:

- Identify hazardous substances such as certain chemicals that are used or produced in the workplace.
- Get material safety data sheets (MSDSs) from the manufacturers and suppliers of hazardous substances brought into the workplace. MSDSs explain the hazards and how to handle and use the substances safely.
- Prepare MSDSs for hazardous substances produced in the workplace.
- Make MSDSs readily available to workers and educate workers on how to use the information in them.
- Where hazardous substances are used, evaluate and monitor the workers' exposures and implement controls to eliminate or (if that is not practicable) to minimize the exposures. Never exceed the exposure limits in the Occupational Health and Safety Regulation.
- Wherever possible, replace hazardous substances with less hazardous ones.
- Design the workplace and processes so that workers are not exposed to the hazardous substances.
- Establish work procedures for safe handling and use of hazardous substances, train workers in these procedures, and ensure that the procedures are followed.
- If necessary, ensure that workers are provided with and use personal protective equipment (PPE) to avoid exposure.

What supervisors can do

Supervisors can do the following to help prevent work-related diseases:

- Ensure that workers are educated and aware of all hazardous substances in the workplace and their adverse health effects.
- Train workers in work procedures incorporating safe handling of hazardous substances, and ensure that workers follow these procedures.
- Ensure that workers have access to required personal protective equipment, are instructed in its use, and always use the required PPE.

What workers can do

Workers can do the following to help prevent work-related diseases:

- Take part in education and training provided on dealing with hazardous substances.
- Be familiar with the contents of the MSDSs for any hazardous substances they may be exposed to.
- Notify supervisors or their employer of new hazards, unsafe practices, or other problems that they become aware of.
- Follow the safe work procedures and specific job instructions that they have been provided with.
- Use required personal protective equipment.

A commitment to preventing work-related diseases

The WCB's new Occupational Disease Prevention Services section has a twofold mandate. It will evaluate the risk of work-related disease to workers in British Columbia and will assist the WCB in working co-operatively with employers and workers to implement strategies that minimize such risk.

Acting manager Bawan Saravanabawan explains that an important function for Occupational Disease Prevention Services is to develop strategies to eliminate or minimize risk for specific workplace hazardous substances. Such substances will include those that the Occupational Health and Safety Regulation classifies as "ALARA substances"– substances to which exposure of workers must be kept **a**s **l**ow **a**s **r**easonably **a**chievable. Other hazardous substances to be targeted include those identified:

- Through a review of WCB disease claims data
- By WCB occupational hygiene officers through workplace interaction
- By other agencies such as the B.C. Cancer Agency and the University of British Columbia

Worker exposure to these hazardous substances will be analyzed from different aspects: What industries and occupations are involved? In what tasks are the chemicals used? How are they used (sprayed, brushed, poured, etc.)? What controls are in place to eliminate or minimize exposure? What is the extent of workers' exposure?

The exposure profiles will then be compared with current exposure limits and with any new recommended limits based on recent medical findings, and the risk to workers posed by a specific substance will be evaluated. The WCB will assess the level of risk based on the degree of exposure and the hazardous nature of the substance. As a result, the WCB may require control measures such as:

- Substitution with a less hazardous substance
- Redesign of the work area or of the work process to eliminate exposure
- Engineering controls, such as local ventilation
- Use of safe work procedures to minimize workers' exposure
- Use of personal protective equipment

By continually evaluating risks and developing ways to control workplace exposures to hazardous substances, Occupational Disease Prevention Services aims to save lives by preventing work-related diseases.

Through the years, the WCB has worked in various ways to reduce the incidence of work-related disease. Today the WCB's focus on preventing work-related diseases includes the following:

- Provides workplace education, consultations, and inspections
- Funds research to identify and control hazards
- Reviews workplace health and safety standards on an ongoing basis
- Produces publications and videos promoting safe work practices
- Supports a new Occupational Disease Prevention Services section

"I recall meeting a sombre-looking retired installer of pipe insulation, a man I had known for years from workplace inspections. I learned that his much anticipated retired life has been drastically reduced due to asbestosis. That feeling of loss has further cemented my determination to do all I can to help advance health and safety in all workplaces."

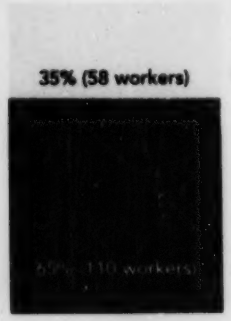
Bawan Saravanabawan,
Occupational Disease Prevention Services section

Work-related deaths in British Columbia, 2001

A review of work-related deaths in 2001

Deaths due to work-related disease account for more than one-third of work-related deaths in 2001. The remaining deaths are single-incident deaths – fatalities resulting from injuries sustained in an accident or from a single large exposure to a hazardous substance. This section of the report provides a statistical overview of all work-related deaths in British Columbia for 2001.

Single-incident and work-related disease deaths in B.C., 2001



35% (58 workers) Work-related disease deaths

Single-incident deaths

Total deaths = 168

Work-related disease deaths accounted for slightly more than one-third of the 168 work-related death claims that were accepted by the WCB in 2001.

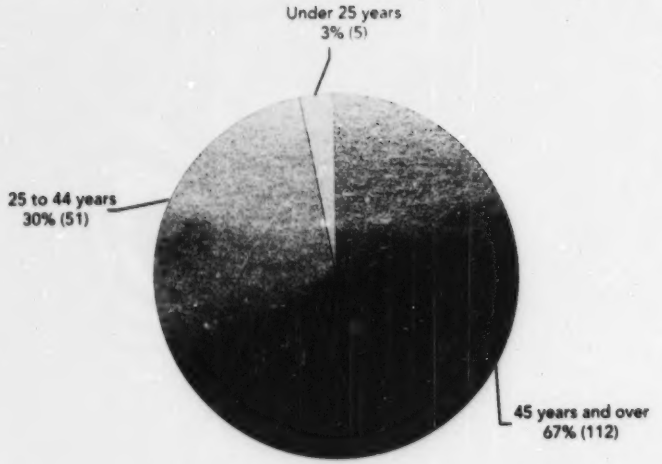
Percentage of male and female workers who died as a result of work-related accidents and diseases in B.C., 2001

4% Female (7 workers)

96% Male (161 workers)

Ninety-six percent of workers who died were male. The disproportionate number of male deaths reflects the fact that the higher-risk industries, such as transportation, construction, and forestry, still employ mostly male workers.

Work-related deaths by age group in B.C., 2001



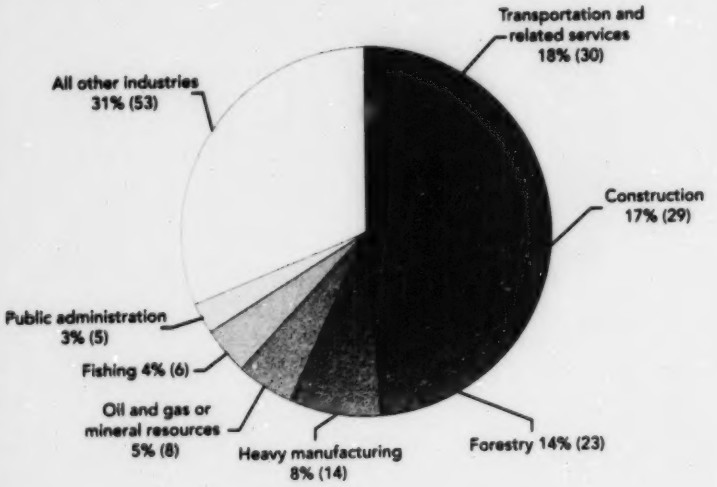
Total number of death claims accepted in 2001 = 168

About two-thirds of workers who died in 2001 were 45 years of age or older. The average age was 52. Of the 58 workers who died of work-related disease, all but one were 45 years or older.

All industries are affected

When it comes to workplace injury and disease prevention, the WCB works with employers and workers across all industries because there is no such thing as a risk-free industry. Work-related deaths can occur in all industries in B.C.

Number of work-related deaths by industry in B.C., 2001


Transportation and related services 18% (30)
All other industries 31% (53)
Construction 17% (29)
Public administration 3% (5)
Fishing 4% (6)
Oil and gas or mineral resources 5% (8)
Heavy manufacturing 8% (14)
Forestry 14% (23)

Total number of death claims accepted in 2001 = 168

As in previous years, the transportation and related services industry, the construction industry, and the forestry industry were the hardest hit by work-related deaths in 2001. There were 82 deaths in these three industries, or almost half (49%) of all work-related deaths in B.C.

Sixteen truck drivers died in motor vehicle accidents, accounting for more than half of the 30 deaths in the transportation industry. In the construction industry, 19 workers – about two-thirds of fatalities in this industry – died of work-related disease, 16 of them from asbestosis or mesothelioma.

Work-related disease deaths

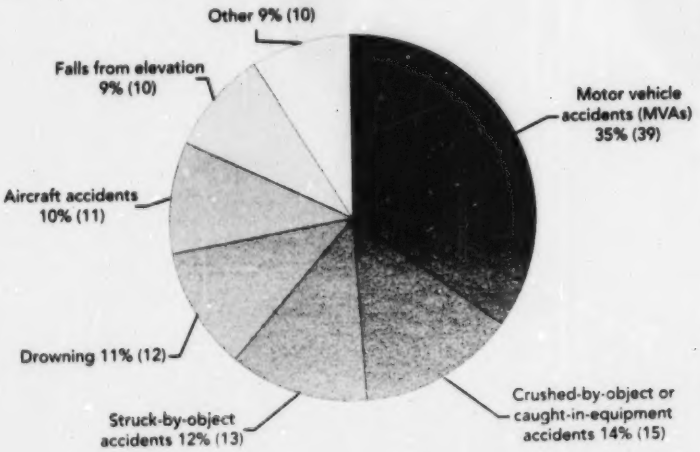
There were 58 deaths from work-related disease in 2001. For information on the diseases that caused these deaths, the industries they occurred in, and initiatives to prevent future disease deaths, please see pages 1 to 10.

Single-incident deaths

Work-related accidents killed 110 workers in B.C. in 2001. Any number of accidents causing death is too many because almost all single-incident deaths are preventable. For this reason, the WCB continues to focus much of its prevention efforts on educating employers and workers about how they can identify and eliminate workplace hazards.

In the following graph, single-incident deaths are divided into accident categories. The next page gives definitions for each accident category along with examples of the types of accidents that occurred in 2001.

Single-incident deaths in B.C., 2001


Other 9% (10)
Falls from elevation 9% (10)
Motor vehicle accidents (MVAs) 35% (39)
Aircraft accidents 10% (11)
Drowning 11% (12)
Struck-by-object accidents 12% (13)
Crushed-by-object or caught-in-equipment accidents 14% (15)

Total number of single-incident death claims accepted in 2001 = 110

Thirty-nine workers died in motor vehicle accidents (MVAs), accounting for 35% of all single-incident deaths in B.C. Sixteen of these workers were truck drivers.

Common types of accidents

Motor vehicle accidents (MVAs) are accidents involving one or more licensed vehicles and often involving pedestrians as well. Workers may be driving their own cars or trucks, or they may be driving company vehicles such as cars, pickup trucks, delivery vans, or logging trucks.

A truck driver died when his truck overturned.

A bus driver died in a head-on collision with a truck.

A logger died when his truck ran over an embankment.

Struck-by-object accidents are accidents in which a worker is struck by a moving object such as a falling tree, a rolling log, an unstable load that shifts, a piece of machinery that flies off, or an improperly parked vehicle that rolls.

A carpenter died of head injuries after being struck by a crowbar.

A faller was struck on the knee by a tree and died from complications arising from this injury.

A mechanic died when the fan separated from the car he was working on and struck him in the neck.

Drowning accidents are accidents in which a worker drowns. For example, workers can drown when a boat sinks or capsizes, or while trying to save a co-worker, or as a result of falling overboard.

A deckhand fell from a tugboat and drowned.

A fisherman drowned after diving into water in an attempt to save a co-worker who had fallen overboard.

A forestry worker drowned when the snowmobile he was driving fell through thin ice on a lake.

Crushed-by-object or caught-in-equipment accidents are accidents in which a worker is caught and crushed in a piece of equipment or between two objects, such as a load of pulp and a steel wall.

A faller was crushed under an uprooted tree.

A brakeman was crushed against a boxcar by a moving train.

A metal fabricator was crushed by a load of steel.

Aircraft accidents are accidents in which an airplane, a helicopter, or another type of aircraft crashes because of mechanical failure, bad weather, poor visibility, or some other cause. Workers may be piloting aircraft for heli-logging operations, heli-skiing or sportfishing operations, in the charter air service industry, or while flying workers in and out of remote worksites.

A logger was killed in a plane crash.

A tour guide was killed in a plane crash.

A pilot was killed in a helicopter crash.

Falls from elevation are accidents in which a worker falls from a height and lands on a surface below the one on which the worker stood before the fall. Workers fall from roof edges, through holes in roofs or floors, while walking along open beams, or from ladders or sets of stairs.

A rigging technician died after falling 60 m (200 feet) when the lightning rod he was strapped to broke.

A millwright died after falling 18 m (60 feet) when the cable of his spider basket failed.

A stone installer died after falling 12 m (40 feet) when his scaffold collapsed.

Other accidents include industrial vehicle accidents, accidents involving electrical contact, exposure to toxic substances, and acts of violence or force.

A security guard was murdered.

An electrician was killed after coming into contact with 13,000 volts of electricity.

A welder collapsed and died after entering the oxygen-deficient hold of a barge.

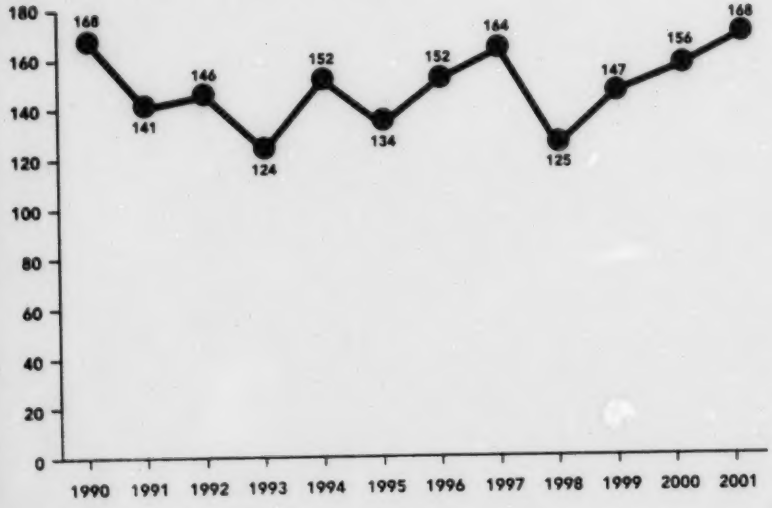
How 2001 statistics relate to previous years

This section explains how the 2001 statistics on work-related deaths in B.C. compare with statistics from recent years. It examines trends in the number of deaths in B.C. workplaces, death rates, and the proportion of single-incident deaths to work-related disease deaths.

Number of deaths remains stable

Awareness of health and safety in B.C. workplaces has led to better training, safer work practices, and improvements in equipment and facilities, yet the total number of work-related deaths per year has changed little over the past 12 years. However, the *number of deaths* tells only part of the story.

Total number of death claims accepted, 1990–2001

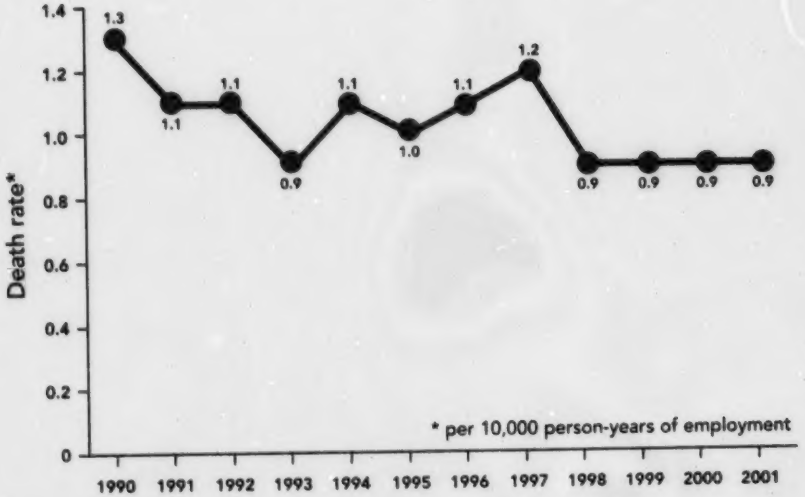


The total number of work-related death claims accepted by the WCB each year has changed little from 1990 to 2001.

Death rates have dropped

To get a more accurate idea of how safe B.C. workplaces are, one must look at *death rates*, which reflect the number of work-related deaths in relation to the number of workers employed during that year. The following graph shows how the death rate has declined from 1990 to 2001. Each number in this graph indicates the number of deaths that occurred for every 10,000 person-years of employment. For example, the death rate of 0.9 in 2001 means that for every 10,000 people working full-time during that year, 0.9 people died from a work-related accident or disease.

Death rate, 1990–2001



The death rate has declined from 1.3 in 1990 to 0.9 in 2001.

Trends in types of work-related deaths

Single-incident deaths have been decreasing over the past two decades while work-related disease deaths have been increasing (see page 2). The rising number of disease deaths is the main reason the *overall* number of work-related deaths in B.C. each year has remained constant. For this reason, the WCB is placing renewed emphasis on identifying and eliminating or minimizing the hazards that can cause work-related diseases. The continued commitment of employers, supervisors, workers, and the WCB to improving health and safety in the workplace will reduce injuries and disease and save lives.

"Many people think work-related deaths can't happen to them, that deaths occur only in high-risk industries such as logging or construction. The truth is that no one is immune to work-related death."

Ralph McGinn, president and CEO,
Workers' Compensation Board of B.C.

WCB resources

Accident investigations and research projects provide the WCB with valuable information that can be used to educate employers and workers about workplace health and safety. The WCB conveys information to employers and workers by distributing publications and videos promoting safe work practices. Many of these publications are available online. To search for them by industry, go to:

www.worksafebc.com/publications/Health_and_Safety_Information/by_industry

Surveys have indicated that those who receive materials describing safe work practices usually take immediate steps to improve workplace health and safety.